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### Deposited in DRO:

03 September 2009

### Version of attached file:

Published Version

### Peer-review status of attached file:

Peer-reviewed

### Citation for published item:

Sheridan, J. A. and Parker Pearson, M. and Jay, M. and Richards, M. and Curtis, N. (2006) 'Radiocarbon dating results from the Beaker people project : Scottish samples.', *Discovery and excavation in Scotland.*, 7 . pp. 198-201.

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## RADIOCARBON DATES

### RADIOCARBON DATING RESULTS FROM THE *BEAKER PEOPLE PROJECT*: SCOTTISH SAMPLES

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The *Beaker People Project* is a major interdisciplinary five-year research programme, funded by the Arts and Humanities Research Council and led by one of the authors (MPP, of Sheffield University. See Parker Pearson 2006 for details). It aims to investigate patterns of diet, mobility and health in British Beaker-associated skeletons (and in contemporaneous non-Beaker associated skeletons) to help address long-standing issues of identity, such as: are the people who were buried with Beaker pottery any different from their contemporaries who were not? Are possible immigrants identifiable, as was the case with the Amesbury Archer? The Project will investigate 250 sets of remains, from five geochemically-contrasting areas – namely eastern Scotland, Yorkshire, the Peak District, Wessex and Wales – using osteology, dental microwear, histology and pathology, and isotopic analysis of tooth enamel and bone (with carbon and nitrogen in bone providing information about diet, strontium and oxygen in tooth enamel providing information about mobility, and sulphur in bone providing information about coastal vs. non-coastal residence). A subset of the 250 individuals is to be radiocarbon-dated, to improve our understanding of Beaker chronology.

Scotland has been the first area to be investigated, with material (mostly from the NE) taken mainly from the collections of National Museums Scotland (NMS) and Marischal Museum (ABDUA). As an adjunct to the Project, and an extension of its own Beaker radiocarbon dating programme, NMS funded two additional radiocarbon dates (for human bones from Slap and from near Kelso). The results, presented below, will be discussed at length in a separate publication. All are AMS dates; calibrated using OxCal v.3.10;  $1\sigma$  values are shown in **bold**. Further information on individual findspots is available from Canmore. The  $\delta^{13}\text{C}$  values are not cited; all but two of the samples had values indicating that the individuals' diet had been wholly or mainly terrestrial in origin, so that no adjustment for marine effect would be necessary. The two exceptions, from Sea View Crescent, Gourdon and from near the House of the Binns, are, interestingly, relatively recent; none of the Bronze Age individuals had a marine dietary signature, even though some had been buried near the coast. The calibration of dates to allow for the marine effect can be complicated; only rough estimates of the calendar date are presented here.

#### Beaker-associated skeletons:

<i>Findspot, museum, Clarke 1970 fig. no. (for Beakers found before 1970)</i>	<i>Beaker type<sup>1</sup></i>	<i>Laboratory no. OxA-</i>	<i>Date BP</i>	<i>Date cal BC <math>1\sigma</math> and <math>2\sigma</math></i>
Pitdrichie (cist 2), Keabog, Aberdeenshire*; ABDUA 90006	LN Step 6 N3(L)	V-2172-22	3910±33	<b>2470-2340</b> 2480-2290
Skateraw, E Lothian* (excavated 1958 by Roy Ritchie); NMS, unreg; Clarke 648	SN Step 5 N3	V-2164-39	3846±29	<b>2400-2200</b> 2460-2200
Sandhole, Fetterangus, Aberdeenshire*; ABDUA 14300	SN Step 3 N1/D	V-2172-23	3845±32	<b>2430-2200</b> 2460-2200
Broomend of Crichton (cist 1), Aberdeenshire; NMS X.ET 5; Clarke 659-660	i) LN Step 5 N2(L); ii) SN Step 5 N3	V-2166-34	3835±33	<b>2350-2200</b> 2460-2190
Ruchlaw Mains, E Lothian*; NMS unreg	SN Step 4 N2 or N3	V-2167-42	3826±39	<b>2350-2200</b> 2460-2140
Boatbridge Quarry (cist 2), S. Lanarkshire*; NMS unreg	SN Step 4 N1	V-2168-42	3824±32	<b>2340-2200</b> 2460-2140
Slap, Turriff, Aberdeenshire; NMS unreg; Clarke 273	SP Step 1 N/NR (undecorated)	V-2172-31	3803±32	<b>2290-2150</b> 2400-2130

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<i>Findspot, museum, Clarke 1970 fig. no. (for Beakers found before 1970)</i>	<i>Beaker type<sup>1</sup></i>	<i>Laboratory no. OxA-</i>	<i>Date BP</i>	<i>Date cal BC 1σ and 2σ</i>
Uppermain, Catterline, Aberdeenshire; ABDUA 14793; Clarke 718	SN Step 6 N4	V-2166-44	3770±31	<b>2280-2130</b> 2290-2040
Park Quarry (cist 1), Durrus, Aberdeenshire; ABDUA 14752	SN/ Step 4/5 N2/ N/NR	V-2172-14	3769±32	<b>2280-2130</b> 2290-2040
Holm Mains Farm (cist 2), Inverness, Highland; c/o Headland Archaeology	SN Step 5/6 N2/N3	V-2166-42	3755±32	<b>2270-2060</b> 2290-2030
Fodderty Farm, Highland*; Inverness Museum INVMG 980.11.8	SP Step 5 N4	V-2172-26	3745±32	<b>2210-2050</b> 2280-2030
Holm Mains Farm (cist 1), Inverness, Highland; c/o Headland Archaeology	SP Step 4/5 N/NR/N2	V-2166-41	3743±33	<b>2210-2050</b> 2280-2030
Nether Criggie, Aberdeenshire; ABDUA 14247; Clarke 322-324	i) WC Step 5 N/NR ii) SN Step 5 N3(L) iii) LN Step 5 N3(L)	V-2166-46	3741±32	<b>2210-2050</b> 2280-2030
Manar, Aberdeenshire*; ABDUA 14765	SP Step 4 N2/N3	V-2172-19	3725±33	<b>2200-2040</b> 2280-2020
Keir, Belhelvie, Aberdeenshire; ABDUA 14226; Clarke 715-717	i) SN Step 5 N3(L) ii-iii) SN Step 5 N4	V-2172-18	3715±32	<b>2200-2030</b> 2210-2020
Stoneywood (cist 1), Newhills, Aberdeenshire; ABDUA 14222; Clarke 486	SN Step 4 N2	V-2172-25	3686±32	<b>2140-2020</b> 2200-1960
Newlands (cist 1), Aberdeenshire; ABDUA 14248; Clarke 691	SN Step 4 N3	V-2172-20	3677±31	<b>2140-1980</b> 2150-1950
Lochend, Highland Inverness Museum INVMG 978.38; Clarke 579	SN Step 5/6 N3	V-2172-27	3534±31	<b>1930-1770</b> 1950-1750

*Notes:* Some of these skeletons had previously been dated (eg as part of the British Museum Beaker Dating Programme, c 1990). These are indicated with an asterisk.

1. Typology according to the schemes of Needham (2005), Shepherd (1986) and Clarke (1970), in that order. Neil Wilkin is thanked for providing useful information about the Park Quarry Beaker.

*Comment:* The results are consistent with the overall range of acceptable C14 dates for Scottish Beakers as previously obtained (see Sheridan in press for details), confirming that most Beakers were used during the last quarter of the third millennium BC. The very earliest Scottish Beakers, which are likely to date to the 25th century BC, are under-represented because they tend to be found in pit graves, where the human remains have decomposed entirely.

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### Food Vessel-associated skeletons:

<i>Findspot, museum</i>	<i>Laboratory no. OxA-</i>	<i>Date BP</i>	<i>Date cal BC 1σ and 2σ</i>
Redden Farm, Sprouston, Scottish Borders; NMS unreg	V-2167-43	3605±60	<b>2110-1880</b> 2140-1770
Blackness Castle, W Lothian; NMS unreg.	V-2167-44	3582±32	<b>1975-1885</b> 2030-1780
Dalmore (cist 1), Highland; ABDUA 14233	V-2172-12	3562±30	<b>1955-1875</b> 2020-17703
Dalmore (cist 2), Highland; ABDUA 14234	V-2172-13	3499±32	<b>1890-1770</b> 1920-1740

*Comment:* These fit within the overall date range for reliably-dated Scottish Food Vessels (as discussed in Sheridan 2004), which suggest that most were in use between the 21st and 18th centuries BC – a slightly later period of peak currency from that of Beakers. The Dalmore vessels are among the most northerly Food Vessels in Britain.

### Early Bronze Age skeletons from short cists with no ceramic associations:

<i>Findspot, museum*</i>	<i>Laboratory no. OxA-</i>	<i>Date BP</i>	<i>Date cal BC 1σ and 2σ</i>
Foveran, Formartine, Aberdeenshire; ABDUA 14257	V-2167-43	3752±31	<b>2210-2050</b> 2290-2030
Birsley Quarry, Tranent, E Lothian; NMS unreg (formerly EUAD IB 205)	V-2166-38	3733±33	<b>2200-2040</b> 2280-2030
Culduthel, Highland <sup>1</sup> ; ABDUA 14221	V-2166-45	3697±33	<b>2140-2030</b> 2200-1970
Tealing Hill, Angus <sup>2</sup> ; NMS X.ET 53	V-2166-36	3683±32	<b>2140-2020</b> 2200-1960
Priory Park, Kirkcaldy, Fife; ABDUA 90009	V-2172-21	3652±32	<b>2130-1960</b> 2140-1930
Gairneybank (cist 3), Perth & Kinross; NMS unreg	V-2168-43	3645±31	<b>2120-1950</b> 2140-1920
Carnach House, Delnies, Highland; ABDUA 14250	V-2166-43	3632±37	<b>2120-1930</b> 2140-1890
Ardachy, Mull, Argyll & Bute; NMS unreg (formerly EUAD IB 218)	V-2164-40	3584±28	<b>1975-1890</b> 2030-1880
Clashfarquhar (Longhillock Cottages), Aberdeenshire; NMS X.ET 16	V-2166-35	3506±32	<b>1890-1770</b> 1920-1740

\* EUAD = Edinburgh University Anatomy Department

*Notes:* 1. From cist associated with adult female wearing belt of disc- and fusiform beads with boat-shaped fastener, made of jet, cannel coal and another blackish material. Probably contemporary with rich adult male Beaker-associated cist nearby. 2. This date gives a *terminus post quem* for a Vase Urn and a Collared Urn from the same cemetery.

*Comments:* These dates fall within the overall range for Beaker- and Food Vessel-associated cists, and some are from cemeteries containing such cists.

**Post-Early Bronze Age skeletons (all from short cists unless specified otherwise): cists.**

<i>Findspot, museum*</i>	<i>Laboratory no. OxA-</i>	<i>Date BP</i>	<i>Date (all cal BC Unless specified otherwise 1σ and 2σ)</i>
9 Holdings, Strathnaver, Highland <sup>1</sup> ; ABDUA 14251	V-2167-43	3156±31	<b>1495-1405</b> 1500-1380
Golspie (cist 2), Highland <sup>2</sup> (slightly polygonal short cist); ABDUA 14757	V-2172-16	2761±31	<b>970-840</b> 1000-830
Kirk Park, Musselburgh, Midlothian <sup>3</sup> ; NMS X.ET 64	V-2167-45	2038±32	<b>95 cal BC -cal AD 5</b> 170 cal BC-cal AD 50
Tormore (Machrie Moor circle 3), Arran, N. Ayrshire <sup>4</sup> ; NMS X.ET 54	V-2166-33	1554±29	<b>cal AD 430-550</b> cal AD 420-580
Near Kelso (near Littledean Tower), Scottish Borders <sup>5</sup> ; NMS unreg	V-2172-32	1299±30	<b>cal AD 665-770</b> cal AD 660-780
Sea View Crescent, Gourdon <sup>6</sup> , Aberdeenshire (long cist); ABDUA 90007	V-2172-17	405±27	probably AD 17th C (see comment above)
Near House of the Binns <sup>7</sup> , W Lothian; NMS X.ET 19	V-2166-37	454±26	Probably AD 15th C (see comment above)

Notes: 1. This is a rare example of a Middle Bronze Age short cist, and a rare example of a dated funerary monument from the far north of the Scottish mainland. 2. This demonstrates the continuing use of short cists, and of the practice of inhumation, into the Late Bronze Age in NE Scotland, and it provides a date for the hitherto enigmatic metalworking moulds found in the cist. 3. There is no reason to doubt the validity of this date, so it appears that this was an Iron Age inhumation within an Early Bronze Age cemetery. The bone isotope results confirm that the individual differs from Early Bronze Age skeletons. 4. There is no obvious reason to doubt the validity of this date, so it appears that this may represent an Early Historic re-use of an Early Bronze Age cemetery; the short cist in which it was found was reported to be 'at a higher level' than other cists within circle 3. Two crude 'flint arrowheads' were found in the cist; they are almost certainly not arrowheads. 5. This may represent an antiquarian mis-association of skeletal material during the 19th century; the bone in question had allegedly been found in a short cist with a Beaker (NMS X.EG 23), so unless the cist had been re-used during the 1st millennium AD, the merging of finds from different findspots is suspected. 6. This was from a long cist, so the post-medieval date is not unexpected. As noted above, the individual had a marine-dominated diet (unlike the Bronze Age skeletons). 7. This individual also had a marine-dominated diet. Found in a rock-cut short cist, so unusual for a medieval burial, but there is no reason to doubt the date's validity.

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